## REMARKS

This Amendment and Response is being submitted in response to the final Office Action mailed January 17, 2006.

Before the Amendments above, claims 1-27 were pending in the application. Claim 1 stands provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of co-pending Application No. 10/803,690. Claims 1-21 stand rejected under 35 U.S.C. 102(b) as being allegedly anticipated by U.S. 5,682,519 to Saldanha, *et al.* (hereinafter "Saldanha"). The Office Action does not address claims 22-27. However, since the prior Office Action is incorporated by reference, Applicant assumes for the purpose of this response that claims 22-27 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Saldanha in view of U.S. 6,385,757 to Gupta (hereinafter "Gupta"). Applicant respectfully traverses the Examiner's rejections.

In the amendment above, Applicant has amended claims 1, 3-7, 9-12, and 13 and cancelled claims 2 and 8. Claims 1, 3-7, 9-12, and 13-27 are now pending in this application. No new matter is added by these amendments and support for these amendments may be found in the specification and claims as originally filed. Reconsideration of the claims is respectfully requested in view of the amendments above and remarks below.

## I.    Double Patenting

Claim 1 stands provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of co-pending Application No. 10/803,690. As Applicant stated in the previous response, Applicant will submit a terminal disclaimer once the Examiner indicates that the claims are allowable if the double-patenting rejection is maintained.

## II.    Claims 1-21

Claims 1-21 stand rejected under 35 U.S.C. 102(b) as being allegedly anticipated by Saldanha. In order to anticipate a claim under 35 U.S.C. 102(b), a reference must

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teach every element of the claim. See M.P.E.P. § 2131. Respectfully, Saldanha does not teach every element of claim 1.

In claim 1, as amended, Applicant claims "[a] processor comprising: a Boolean logic unit <u>formed in a static circuit with a static data path</u>, wherein the Boolean logic unit is operable for dynamically performing the short-circuit evaluation of Conjunctive Normal Form Boolean expressions/operations." Saldanha does not teach ""[a] processor comprising: a Boolean logic unit <u>formed in a static circuit with a static data path</u>, wherein the Boolean logic unit is operable for dynamically performing the short-circuit evaluation of Conjunctive Normal Form Boolean expressions/operations."

Saldanha teaches building a circuit to physically represent a particular Boolean expression. For instance, Saldahna states "[t]he present invention provides a method for generating a low-power circuit from a Shannon graph..." Saldanha, Col. 3:24-29. Thus, Saldanha is varying the circuit and the data path design based on the results of the Shannon graph. Certain portions of the circuit are omitted to save power if they do not affect the result, i.e., the data path changes. Saldanha modifies the data path to use only the minimum number of components required to computer a predetermined operation or computation. *See, e.g.*, Saldanha, Col. 6:6-42. The circuit is not "<u>formed in a static circuit with a static data path</u>" and is unable to "dynamically perform the short-circuit evaluation of Conjunctive Normal Form Boolean expressions/operations" as Applicant has claimed in claim 1.

In Saldanha's circuit, the electrical signal must propagate through the entire circuit that represents the entire Boolean expression. The short-circuiting described in Saldanha is a means for optimizing a data path for an expression. The circuit still must evaluate all data input to the circuit. *See, e.g.*, Saldhana, Col. 8:47-64. In contrast, Applicant claims a process for short-circuiting based on the data that is provided to the Boolean logic unit, i.e., the process eliminates evaluations when the inputs dictate that the overall result of the expression or conjunct can be short-circuited.

Thus Saldhana does not anticipate claim 1. Claims 3-7, 9-12, and 13-27 depend from claim 1 and are allowable for at least the same reasons.

In claim 3, as amended, Applicant claims "[t]he processor of claim 1, wherein the results of all AND computations in the evaluation of the Conjunctive Normal Form Boolean expression/operation are stored and represented by an $n$-bit AND register, wherein the $n$-bit AND register is operable for storing the composite result of all conjuncts that have been evaluated at any given point in time during the evaluation of a Conjunctive Normal Form Boolean expression/operation." The prior Office Action states that the Saldanha rolls up the results of terms and conjuncts. See, *Office Action* mailed August 8, 2005, page 4. However, Saldanha utilizes a separate set of gates to represent the evaluation of each term/conjunct in a Conjunctive Normal Form Boolean expression. Each gate rolls up the results of all gates that precede it in the data path. Only the last gate in an overall expression or a conjunct is capable of rolling up the result of the entire expression or conjunct. In contrast, in the processor claimed in claim 3, "the results of all AND computations in the evaluation of the Conjunctive Normal Form Boolean expression/operation are stored and represented by an $n$-bit AND register, wherein the $n$-bit AND register is operable for storing the composite result of all conjuncts that have been evaluated at any given point in time during the evaluation of a Conjunctive Normal Form Boolean expression/operation." The circuit disclosed in Saldanha does not include this capability. Accordingly, claim 3 is allowable over Saldanha.

Applicant respectfully requests that the Examiner withdraw the rejection of claims 1, 3-7, 9-12, and 13-21.

### III.    Claims 22-27

Claims 22-27 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Saldanha in view of Gupta. To establish a *prima facie* case of obviousness, the prior art references when combined must teach or suggest all of the claim limitations. Respectfully, neither Saldanha nor Gupta alone or when combined teaches or suggests all the claim limitations of claims 22-27.

Claims 22-27 depend from claim 1. In claim 1, as amended, Applicant claims "[a] processor comprising: a Boolean logic unit <u>formed in a static circuit with a static data path</u>, wherein the Boolean logic unit is operable for dynamically performing the

short-circuit evaluation of Conjunctive Normal Form Boolean expressions/operations." Neither Saldanha nor Gupta alone or when combined teaches or suggests "[a] processor comprising: a Boolean logic unit <u>formed in a static circuit with a static data path,</u> wherein the Boolean logic unit is operable for dynamically performing the short-circuit evaluation of Conjunctive Normal Form Boolean expressions/operations." Thus claim 1 is allowable over Saldanha in view of Gupta. Since claims 22-27 depend from claim 1, claims 22-27 are allowable as well. Applicant respectfully requests the Examiner withdraw the rejection of claims 22-27.
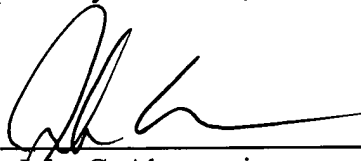
## VI.    Conclusion

Applicant respectfully submits that claims 1-27 are allowable. A favorable Office Action is respectfully solicited.

Should the Examiner have any comments, questions or suggestions of a nature necessary to expedite the prosecution of the application, or to place the case in condition for allowance, the Examiner is courteously requested to telephone the undersigned at the number listed below.

Respectfully submitted,

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By: _____

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